PATENT
Attorney Docket No. 402842

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:

BARRE et al.

Application No. 10/686,777

Filed: October 17, 2003

Art Unit: 2854

Examiner: Ren Luo Yan

For: ENDLESS PRINTING SLEEVE, OF MULTI-LAYER TYPE, WHICH HAS A PRINTING LAYER, A COMPRESSIBLE LAYER AND A CIRCUMFERENTIAL STIFFENING LAYER

DECLARATION UNDER 37 CFR § 1.132

Commissioner for Patents
U.S. Patent and Trademark Office
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Dear Sir:

I, Gérard Rich, hereby declare that:

1. I am one of the named inventors of the referenced patent application ("the application"). I am employed by MacDermid Graphic Arts, the sole Assignee of the application, as Vice President and Research and Development Director. I hold a Ph.D. in Engineering Composites from Ecole des Mines Paris, and I have 25 years of experience in the field of printing sleeves.

2. I have reviewed the application, the presently pending claims, U.S. Patent No. 6,703,095 to Busshoff et al. (hereinafter, "Busshoff"), U.S. Patent No. 5,347,927 to Berna et al. (hereinafter, "Berna"), and U.S. Patent No. 5,352,507 to Bresson et al. (hereinafter, "Bresson"). As one of the named inventors of Berna and Bresson, I am particularly familiar with the contents of those references. As a named inventor of the application and two of the cited references, as well as having 25 years of experience in the field of printing sleeves, I believe I am in a

particularly good position to elucidate the differences between the claimed invention and the printing sleeves of Berna, Bresson, and Busshoff.

3. Claim 1 of the application defines a printing sleeve comprising, *inter alia*, a circumferential stiffening layer having a thickness not exceeding 0.5 mm, a Young's modulus in the circumferential direction of at least 400 MPa, and a capability of undergoing a deviation of 100 to 500 microns without fracture. Claim 28 defines a printing sleeve comprising, *inter alia*, a circumferential reinforcing composite material located between the compressible layer and the printing layer having a total thickness between 0.2-0.5 mm and a Young's modulus in the circumferential direction between 400-100,000 MPa.

4. Layer 5 of Bresson, layer 12 of Busshoff, and layer 14 of Berna do not meet all of the limitations of the independent claims.

Busshoff

5. Claim 1 of the application defines a printing sleeve comprising, *inter alia*, a stiffening layer capable of undergoing a deviation of 100 to 500 microns without fracture. Base sleeve 12 of Busshoff is not capable of undergoing a deviation of 100 to 500 microns without fracture, as claimed. Busshoff teaches that the base sleeve 12 is fabricated from a polymer resin reinforced with a fibrous material. The fibrous material may contain glass fibers, aramid fibers, carbon fibers, metal fibers, ceramic fibers, or any other synthetic endless or long fibers that increases the stability, stiffness, and rigidity of sleeve 10 so that it may accommodate conditions found in conventional graphic arts environments (Busshoff, col. 5, line 61 to col. 6, line 7).

6. Thus, the base sleeve 12 of Busshoff is a structural composite with a hard matrix. Accordingly, the base layer 12 of Busshoff is designed to replace a steel carrier and is not designed for withstanding flexural deflection. The printing process regularly overloads the sleeve due to defects in the paper and splices of paper rolls, which increases the pressure applied to the sleeve and more than doubles the deflections applied to the sleeve. The base layer 12 of Busshoff cannot withstand a deviation of 100 to 500 microns because the rigid matrix will crack under repeated loadings. Thus, base layer 12 of Busshoff is not capable of undergoing a deviation of 100 to 500 microns without fracture, as claimed.

Bresson

7. Layer 5 of Bresson also cannot be characterized as the claimed stiffening layer. Layer 5 of Bresson is an elastomer layer optionally reinforced by fibers (col. 5, lines 40-42). Bresson further teaches that the thickness of the elastomeric layer 5 is 1 mm (col. 8, lines 14-15).

8. In order to for the elastomeric layer 5 of Bresson to be an adequate stiffening layer, as claimed, it would be necessary to dramatically harden the elastomer of layer 5 of Bresson or to increase the thickness of the layer 5. Dramatically hardening the elastomer layer 5 of Bresson or increasing the thickness of the layer 5 would cause the layer 5 to become brittle and susceptible to cracking under deflection. Moreover, increasing the thickness is not practical when the space available for the printing sleeve is quite limited. Thus, layer 5 of Bresson cannot be characterized as the claimed stiffening layer.

9. Furthermore, the claimed printing sleeve preferably has a Young's modulus in the circumferential direction of 1000-2000 MPa (specification, page 4, lines 11-13). Bresson, on the other hand, teaches that the Young's modulus in the circumferential direction of the elastomeric layer 5 is at least 100 MPa and is preferably equal to 200 MPa (col. 6, lines 2-6). This low Young's modulus that is taught in Bresson will not provide the same capabilities and functionalities as the claimed stiffening layer. Therefore, Bresson does not teach a printing sleeve including the claimed stiffening layer.

Berna

10. Layer 14 of Berna is not comparable to the claimed stiffening layer. Layer 14 of Berna is spirally wrapped around the cylinder with at least two warps (col. 3, lines 51-52; Figure 3). The outer part of the layer 14 of Berna undergoes complex deformation when deflected, however, the inner part that is sitting on the carrier or the cylinder is not deflected. Accordingly, the printing element described in Berna provides a very different approach to the problem of offset printing sleeves. Thus, layer 14 of Berna cannot be characterized as the claimed stiffening layer.

11. I declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, that these statements were

made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

October 9

Date 2007

6-2-09

Gérard Rich